



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/801,743	03/15/2004	Iddys D. Figueroa	200310580-1	1819

22879 7590 01/11/2005

HEWLETT PACKARD COMPANY  
P O BOX 272400, 3404 E. HARMONY ROAD  
INTELLECTUAL PROPERTY ADMINISTRATION  
FORT COLLINS, CO 80527-2400

EXAMINER

SOUW, BERNARD E

ART UNIT	PAPER NUMBER
----------	--------------

2881

DATE MAILED: 01/11/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/801,743

Applicant(s)

FIGUEROA, IDDYS D.

Examiner

Bernard E Souw

Art Unit

2881

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 15 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-53 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-40 is/are allowed.
- 6) ☒ Claim(s) 41-53 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 03/15/2004.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

1. Claims 41-50 are rejected under 35 U.S.C. 102(b) as being anticipated by Andrien et al. (USPGPUB 2002/0096631).

► Regarding claim 41, Andrien et al. disclose in Figs. 5, 6, 16 and 18 a system for producing electrospray ions comprising:

- a means 101-106 shown in Fig.5 and 131-132 shown in Fig.6 for thermally actuating the discharge of a plurality of sample material particles, as recited in sect.[0047] and [0048], respectively;

- a means 91-96 (Fig.5) and 121-123 (Fig.6) for emitting said sample material particles disposed adjacent to said means 101-106 and 131-132 for thermally actuating a discharge, said means for emitting (91-96 in Fig.5 and 121-123 in Fig.6) being configured to selectively apply a voltage potential (to electrodes 141-142 in Fig.6), and

to permit a passage of said plurality of sample material particles, as recited in sect.[0047] and [0048], respectively.

► Regarding claim 42, the limitation that the emitting means 121-123 in Fig.6 is disposed between approximately 0.5 cm and 3.0 cm from means 131-132 is inherent in sect.[0052], as indicated by geometrical comparison to the distances  $z_{1,2}=1.5$  cm and  $r_2=1.5$  cm in Fig.6. Since the distances are only approximates and they are essentially uncritical for the proper functioning of the device, such an estimate based on comparison in the figure drawing is fully legitimate.

► Regarding claim 43, a means for storing the sample material(s) is not shown, but is inherently understood to be located prior to means 101-106 in Fig.5 and means 131-132 in Fig.6, whereas the limitation of fluid-coupling is expressly recited in sect.[0047]/II.2-5.

► Regarding claim 44, a counter electrode 112 and 140 adjacent to means 91-96 and 121-123 are disclosed in Fig.5 and Fig.6, respectively.

► Regarding claim 45, the emitting means 91-96 and 121-123 and the corresponding counter electrode 112 and 140, respectively, are configured to generate electrospray ions, as recited in sect.[0047] and [0048], respectively.

► Regarding claim 46, the potential between the counter electrodes and the sample emitting means is in the range of 3 to 5 kV, as recited in sect.[0048]/column 1, lines 1-4 from bottom, and in sect.[0048], respectively.

► Regarding claims 49 and 50, the means for channeling ions is indicated by numerals 349, 350 in Fig.16, as recited in sect.[0082], and a mass spectrometer (MS) to

which the ions are directed by the channels 349,350, is recited in Andrien's claims 15 to 19, whereas a time-of-flight MS is recited in Andrien's claim 15.

***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 46-48 and 51-53 rejected under 35 U.S.C. 103(a) as being unpatentable over Andrien et al. in view of Ebeling et al. (USPAT 6,649,907).

Andrien et al. disclose all the limitations of claims 46-48 and 51-53, as previously applied to claims 41-50, except for additional limitations that are rendered obvious by Ebeling et al., to be individually discussed as follows:

- ▶ Regarding claim 46, a potential of 3 to 5 kilovolts is also disclosed by Ebeling et al. in Col.21/ll.1-9.
- ▶ Regarding claims 47 and 48, Andrien's emitting means includes a grid 384 shown in Fig.18, as recited in sect.[0087].

It would have been obvious to one of ordinary skill in the art at the time the invention was made to make Andrien's grid 384 out of metal, since it is conventional to apply a voltage potential to the grid, which can only properly function if the grid is made of a conductive material, i.e., metal. It would have been further obvious to one of ordinary skill in the art at the time the invention was made to make the metal grid out of

stainless steel, in order to avoid corrosion that would emit a lot of outgas during operation in (high) vacuum. The conventional use of stainless steel in vacuum technique is rendered obvious by Ebeling et al., as recited in Col.21/II.14-15.

► Regarding claim 51, ESI ion sources can be operated in pulsed mode at a frequency of approximately 1 kHz to 200 kHz, as recited by Ebeling et al. in Col.26/II.44-46 and Col.27/II.5-7.

► Regarding claim 52, production rates are already recited by Andrien et al. in sect.[0070] and [0071]. However, the limitation that the production rate of sample materials ranges from 5 pL to 140 pL is covered by Ebeling's production rate recited in Col.27/II.7-10.

► Regarding claim 53, the limitation that the sample material particles are produced as a pulsed flow is recited by Ebeling et al. in Col.6/II.2-7, Col.6/II.19-23 and Col.7/II.30-34.

#### **ALLOWANCE**

4. Claims 1-40 are allowed.

#### ***Reasons for Allowance***

5. Claims 1, 21 and 30 are allowed for reciting a system or method for producing electrospray ions by employing a thermal inkjet material dispenser. Although the wording "electrospray ions" is recited in the preamble, it has been given a patentable weight for specifically reciting both "electrospray" and "ions".

Claims 3-20, 22-29 and 31-40 are also allowed because of their dependencies, either directly or indirectly, upon claims 1, 21 or 30.

***Communications***

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Bernard E Souw whose telephone number is 571 272 2482. The examiner can normally be reached on Monday thru Friday, 9:00 am to 5:00 pm..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John R Lee can be reached on 571 272 2477. The central fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306 for regular communications as well as for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703 308 0956.

A handwritten signature in black ink, appearing to read "Bernard E. Souw", with a large, sweeping underline.

Bernard E. Souw

Patent Examiner – AU 2881

January 07, 2005